IN THE CLAIMS:

Please add claims 22-31 as follows:

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1. (Previously amended) A planar slice of semiconductor substrate material of a first conductivity type provided at one face with a first region of a second conductivity type having a higher dopant concentration than that of the substrate and at the opposite face a second region of said second conductivity type having a higher dopant concentration than that of the substrate, wherein each of said faces has had removed from part of it by abrasion a depth of material which increases gradually as the outer edge is approached and defines a removal region having a profile which varies substantially smoothly along said removal region, so that the junction between each of said first and second regions and the substrate is exposed along a path following the shape of the perimeter of the slice but so that the removal of material ceases at a distance outwardly beyond the exposure of the junction to leave a rim of the original planar faces of the slice at its perimeter.

2. (Original) A slice according to claim 1, wherein the slice is a disc.

3. (Original) A slice according to claim 1, wherein the material of the slice is silicon.

4. (Original) A slice according to claim 1, wherein the edge of the slice is rounded in section.

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5. (Original) A slice according to claim 1, wherein said first and second regions of said second conductivity type are formed by the diffusion of a dopant of said second conductivity type into the faces of the substrate so as to over-dope the original first conductivity type and form a junction therewith at a predetermined depth.

6. (Original) A slice according to claim 1, wherein said first and second regions of said second conductivity type extend around the outer edge of the slice to form a surface region which is broken only where each of said junctions is exposed.

7. (Original) A slice according to claim 1, wherein the gradual increase in depth of the removal of material constitutes an angle of less than 7° relative to the plane of the junction thereby exposed.

8. (Original) A slice according to claim 7, wherein said angle is in the same range from 2° to 5°.

9. (Original) A slice according to claim 7, wherein said angle is about 3°.

10. (Original) A slice according to claim 1, wherein the substrate material is of n-type conductivity and the surface regions are of p-type conductivity.

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11. (Original) A slice according to claim 1 with the addition of further semiconductor regions and ohmically connected electrodes so as to form an operable electrical device.

12. (Withdrawn) A method of producing a semiconductor junction profile, comprising providing a planar slice of semiconductor substrate material of a first conductivity type provided at one face with a first region of a second conductivity type having a higher dopant concentration than that of the substrate and at the opposite face a second region of said second conductivity type, having a higher dopant concentration than that of the substrate, the method comprising removing from part of each of said faces by abrasion a depth of material which increases gradually as the outer edge is approached so that the junction between each of said regions and the substrate is exposed along a path following the shape of the perimeter of the slice but so that the removal of material ceases at a distance outwardly beyond the exposure of the junction to leave a rim of the original planar faces of the slice at its perimeter.

13. (Withdrawn) A method according to claim 12, wherein the slice is a disc.

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14. (Withdrawn) A method according to claim 12, wherein the material of the slice is silicon.

15. (Withdrawn) A method according to claim 12, wherein the edge of the slice is surrounded in section.

16. (Withdrawn) A method according to claim 12, wherein said first and second regions of said second conductivity type are formed by the diffusion of a dopant of said second conductivity type into the faces of the substrate so as to over-dope the original first conductivity type and form a junction therewith at a predetermined depth.

17. (Withdrawn) A method according to claim 12, wherein said first and second regions of said second conductivity type extend around the outer edge of the slice to form a surface region which is broken only where each of said junctions is exposed.

18. (Withdrawn) A method according to claim 12, wherein the gradual increase in depth of the removal of material constitutes an angle of less than 7^0 relative to the plane of the junction thereby exposed.

19. (Withdrawn) A method according to claim 18, wherein said angle is in the range from 2° to 5°.

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20. (Withdrawn) A method according to claim 18, wherein said angle is about 3°.

21. (Withdrawn) A method according to claim 12, wherein the substrate material is of n-type conductivity and the surface regions are of p-type conductivity.

22. (New) A planar slice of semiconductor substrate material produced by the method comprising the steps of:

providing a planar slice of semiconductor substrate material of a first conductivity type provided at one face with a first region of a second conductivity type having a higher dopant concentration than that of the substrate and at the opposite face a second region of said second conductivity type, having a higher dopant concentration than that of the substrate;

removing from part of each of said faces by abrasion a depth of material which increases gradually as the outer edge is approached so that the junction between each of said regions and the substrate is exposed along a path following the shape of the perimeter of the

slice but so that the removal of material ceases at a distance outwardly beyond the exposure of the junction to leave a rim of the original planar faces of the slice at its perimeter.

23. (New) The planar slice according to claim 22, wherein the slice is a disc.

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24. (New) The planar slice according to claim 22, wherein the material of the slice is silicon.

25. (New) The planar slice according to claim 22, wherein the edge of the slice is surrounded in section.

26. (New) The planar slice according to claim 22, wherein the first and second regions of the second conductivity type are formed by the diffusion of a dopant of the second conductivity type into the faces of the substrate so as to over-dope the original first conductivity type and form a junction therewith at a predetermined depth.

27. (New) The planar slice according to claim 22, wherein the first and second regions of the second conductivity type extend around the outer edge of the slice to form a surface region which is broken only where each of the junctions is exposed.

28. (New) The planar slice according to claim 22, wherein the gradual increase in depth of the removal of material constitutes an angle of less than 7^0 relative to the plane of the junction thereby exposed.

29. (New) The planar slice according to claim 28, wherein the angle is in the range from 2° to 5°.

30. (New) The planar slice according to claim 28, wherein the angle is about 3°.

31. (New) The planar slice according to claim 22, wherein the substrate material is of n-type conductivity and the surface regions are of p-type conductivity.